
Modular Training Standards

Perform Shotcreting

Program #770010

**Shaft Services Specialties Group
Module U0086**

Ministry of Training,
Colleges and Universities

Modular Training Standards

Perform Shotcreting

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**Shaft Services Specialties Group
Module U0086**

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This document is the property of the trainee/
employee named inside and represents the
official record of his/her training.

PERFORM SHOTCRETING

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TRAINING UNIT

NUMBER	TITLE
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**AREAS OF
COMPETENCY**

**COMPETENCY ANALYSIS PROFILE
PERFORM SHOTCRETING
ON-THE-JOB TRAINING STANDARDS
SKILLS.**

PERFORM SHOTCRETING U0086.0	Identify and respond to workplace hazards. 0086.01	Inspect and scale workplace. 0086.02	Extend services. 0086.03	Prepare face for shotcreting. 0086.04	Conduct pre- operational checks on mobile and non- mobile shotcrete equipment and carrier. 0086.05
	Start up shotcrete carrier. 0086.06	Position shotcrete carrier . 0086.07	Perform pre- operational checks on shotcrete equipment. 0086.08	Place shotcrete. 0086.09	Shut down equipment. 0086.10

PREFACE

This training document was developed by the Program Development and Standards Unit of the Ministry of Training, Colleges and Universities, in consultation with representatives from the Underground Hard Rock Mining industry. These Training Standards are intended to be used by trainee, trainers/instructors and companies as a "blueprint" for training or as a prerequisite for government accreditation/certification. While this training document is intended as guidelines for training, all issues might not apply in all operations.

A Basic Underground Hard Rock Miner (entry level) is a worker who has achieved accreditation in the entire Common Core Program # 770010. The Mining Tripartite Committee recommends that the employer must provide training in the entire common core for the Basic Underground Hard Rock Miner Training Program, to the worker, within the first year of employment. The prerequisite common core and specialty modules related to a specialty module must be taken before training in the specialty module, e.g Jumbo Drill *NOTE: To be trained and accredited in this module, the prerequisite modules from Program #770010 are U0000, U0001, U0002, U0004, U0006 and U0011. The other prerequisite modules, where applicable, are U0005, U0007, U0014, U0015 and U0082.* Employers have a responsibility to train workers for the work to be done.

The first three modules of Program #770010 - U0000, U0001 and U0002 are prerequisites to all other modules for the program. They must be completed before any other modules can be done and before the employee can be permitted to work underground.

Under the Occupational Health & Safety Act - R.R.O. 1990 Regulation 854, 11.3 there is an allowance for the recognition of equivalent training from other jurisdictions to Ontario training. Based on a comparison of the two programs, the Mining Tripartite Committee has deemed Quebec's Formation Modulaire du Travailleur Minier (FMTM) program to be equivalent to Ontario's Program #770010 Common Core except for specific mine orientation (U0000, Follow Surface and Underground Induction Procedures) and secondary blasting (U0006, Blast Rock). Employers should contact their local apprenticeship office for details about the requirements associated with these equivalencies.

New trainees or experienced miners must obtain accreditation in the same way. Each must demonstrate the skills specified in each Performance Objective to the described minimal acceptable standard as prescribed in each module. These demonstrations must be administered in an operating mine by a trainer designated by the company who shall follow the Performance Demonstration Guidelines approved by the Mining Tripartite Committee.

The care and maintenance of this book is the joint responsibility of the trainee and the employer. The Training Standards were developed specifically for documenting the trainee's acquisition of skills.

PREFACE - Cont'd

Areas of the Basic Underground Hard Rock Common Core including mechanical staging, drilling, rock bolting, and mucking may infringe on some speciality modules for purposes of safety and technological changes. However, accreditation in these areas of the Common Core is not intended to replace accreditation in the speciality modules.

Throughout the document the term "including" is often used. "Including" means : one or more of the items listed, but not limited to those items included in the list.

N.B. Re: Lock out and /or tag, where it is practical or possible to lock, then locking and tagging should be the norm.

NOTICE/DECLARATION FOR COLLECTION OF PERSONAL INFORMATION

1. This information is collected under the authority of the Order-In-Council Number 701/85.
2. The information is collected for the purpose of administering this modular training program within the Province of Ontario.
3. Questions regarding collection and use of this information may be directed to:

Director of Apprenticeship
Workplace Training Branch
Ministry of Training, Colleges and Universities
900 Bay Street
17th Floor
Toronto, Ontario
M7A 1L2
(416) 326-5605

IMPORTANT DIRECTIONS TO TRAINERS

Trainers instructing workers in the specialty modules for Program 770010 must meet the Trainer Qualification and Criteria Guidelines for Program #770010. They must be accredited in the Basic Common Core Underground Hard Rock program #770010 and the specialty module they will be instructing. Contact your local apprenticeship office for a copy of the Trainer Qualification and Criteria Guidelines.

The Training Standards identify skills required for this occupation and its related training program.

These Training Standards have been written in concise statements which describe how well a trainee must perform each skill in order to become competent.

In using these Training Standards, trainers will be able to ensure that the trainee is developing skills detailed for the occupation.

Trainers and trainees are required to sign off and date the skills following each successful acquisition.

Employers participating in this training program will be designated as the Signing Authority and are required to attest to successful achievement in the space provided at the end of each unit.

IMPORTANT DIRECTIONS TO THE TRAINEE

Trainee

1. It is the responsibility of the trainee to inform the local Apprenticeship Client Services office regarding the following changes:
 - change of trainee name or address;
 - transfer to a new employer;
2. Training Reports must be signed for modular trainees by a Ministry of Training, Colleges and Universities designated Signing Authority and forwarded to a local Apprenticeship Client Services office.
3. At the completion of training, the Trainee Completion Form must be completed and signed off by the Signing Authority and submitted to local Apprenticeship Client Services office.

PERFORM SHOTCRETING

UNDERGROUND HARD ROCK MINING SPECIALITY MODULES LISTING BY GROUPS

GROUP 1 PRODUCTION SPECIALTIES

U0051 Perform Non-Mechanized Room and Pillar Mining
U0052 Perform Mechanized Room and Pillar Mining
U0053 Perform Shrinkage Mining
U0054 Perform Regular Cut and Fill Mining
U0055a Perform Mechanical Cut and Fill Mining-
Non Captive Stope
U0055b Perform Mechanical Cut and Fill Mining-
Captive Stope
U0056 Perform Square Set Mining
U0057 Perform Under Cut and Fill Mining
U0058 Perform Non-Mechanized Bulk Mining
U0059 Perform Mechanized Bulk Mining

GROUP 3 HAULAGE SPECIALTIES

U0015 Maintain Tire and Wheel Assemblies
U0017 Operate Scram Drift
U0019 Perform Track Haulage- Operate
U/G haulage Train Remote Control
U0020 Perform Trackless-Haulage Operate
Scoop Tram-Remote Control
U0023 Operate Front-End Loader
U0067 Perform Track Haulage- Operate
U/G Haulage Train

GROUP 2 DEVELOPMENT SPECIALTIES

U0016 Perform Non Mobile-Trackless Drifting
U0060 Perform Mobile Drifting
U0061 Perform Non-Mobile Track Drifting
U0062 Perform Conventional Untimbered Raising
U0063 Perform Conventional Timbered Raising
U0064 Perform Mechanized Raising
U0065 Perform Drop/Inverse Raising Mechanized/NonMechanized
U0066a Perform Shaft Sinking- Timber Lining Installation
U0066b Perform Shaft Sinking- Concrete Lining Placement
U0066c Perform Shaft Mucking
U0066d Perform Shaft Drilling and Blasting

GROUP 4 DRILLING AND BLASTING SPECIALTIES

U0069 Operate Non-Mechanized Long Hole Drill
U0070 Operate In-The-Hole Drilling
U0072 Operate Raise Bore Drill
U0089 Operate Mechanized Jumbo Drill
U0090 Operate Mechanized Long Hole Drill
U0092 Perform Mobile Bulk Blasting
U0093 Perform Non-Mobile Bulk Blasting

PERFORM SHOTCRETING

GROUP 3 **HAULAGE SPECIALTIES - cont'd**

U0068a Perform Trackless Haulage-Operate Scoop Tram Draw Point

U0068b Perform Trackless Haulage-Operate Scoop Tram Production/Development

U0091 Operate Haulage Truck

GROUP 5 **GENERAL SERVICES**

U0013 Operate Lifting Mechanism(s)

U0014 Operate Forklift

U0018 Operate Mechanized Rock Bolter

U0021 Operate Bulldozer

U0022 Operate Grader

U0024 Operate Utility Vehicle

U0025 Operate Mechanized Muck Conditioner

U0026 Operate Mechanized Cable Bolter

U0027 Operate Non-Mechanized Cable Bolter

U0028 Operate Scissor Lift

U0029 Operate Rock Breaker

U0033 Operate Oxyacetylene Cutting Equipment

U0035 Operate Backhoe

U0036 Operate Overhead Crane

U0074 Operate Mine Hoist- Friction or Drum

U0075 Install and Maintain Track System

U0076 Perform Fill Placement

U0077 Operate Underground Crusher

U0078 Operate Underground (Filter) Decantation System

U0079 Operate Conveyor

U0080 Install and Maintain Underground Pipe System

U0081 Operate Tipple

U0082 Install and Maintain Underground Ventilation Equipment

GROUP 6 **SHAFT SERVICES**

U0083 Operate Cage

U0084 Perform Shaft Maintenance

U0088 Operate Skip

GROUP 7 **CONSTRUCTION SERVICES**

U0085a Construct Concrete Installations

U0085b Construct Timber Installations

U0085c Construct Steel Installations

U0086 Perform Shotcreting

PERFORM SHOTCRETING

TRAINEE COMPLETION FORM

Trainee Name

Print

Signature

Social Insurance Number

The Training Unit, when completed, should be signed off by Trainer/ Signing Authority below. Submit required documentation to your local Apprenticeship Client Services office. Any supporting documentation should also be attached.

Employer Name:

Address:

Telephone:

Signing Authority:

Signature

TRAINING UNIT COMPLETION FORM

**TRAINING TITLE
UNIT**

SIGNING AUTHORITY

U0086 Perform Shotcreting

U0086.0 PERFORM SHOTCRETING**GENERAL PERFORMANCE OBJECTIVE**

Perform Shotcreting, by identifying and responding to workplace hazards; inspecting and scaling workplace; extending services; preparing face for shotcreting; conducting pre-operational checks on shotcrete equipment and carrier; starting up shotcrete carrier; positioning shotcrete carrier; performing pre-operational checks on shotcrete equipment; applying shotcrete; shutting down equipment according to government legislation, company standards, and manufacturer specifications.

NOTE: To be trained and accredited in this module, the prerequisite modules from Program #770010 are U0000, U0001, U0002, U0011 and U0013. The other prerequisites modules where applicable are U0003, U003a, U003b, U0014, U0024, U0028 and U0033.

PERFORMANCE OBJECTIVES

Trainer's Name (Print)

Trainee's Name (Print)

SKILLS

- 0086.01 Identify and respond to workplace hazards, including: ground conditions, ventilation, open holes above/ below, and housekeeping, by isolating area; and reporting deficiencies according to government legislation and company standards.

Date Completed

Trainer's Signature

Trainee's Signature

- 0086.02 Inspect and scale workplace, by selecting scaling bar for the specific job based on type, size and condition; fastening and connecting hoses; washing down area; setting water flow to control dust; performing scaling procedures; checking ventilation flow; taking corrective action and/or reporting according to government legislation and company standards.

Date Completed

Trainer's Signature

Trainee's Signature

PERFORM SHOTCRETING

U0086.0 PERFORM SHOTCRETING - Cont'd

- 0086.03 Extend services, including: air, water, power, ventilation, and communication lines, by bleeding air and water lines; flushing and installing headers; fastening, securing, hanging and supporting services; locking out and/or tagging; and repairing and/or reporting deficiencies according to government legislation, company standards and manufacturer specifications.

Date Completed

Trainer's Signature

Trainee's Signature

- 0086.04 Prepare face for shotcreting, by cleaning and marking bootlegs and old cut, using non-sparking materials; applying procedures for handling misholes; protecting services, including: air and water pipes, electrical, blasting, ground control cables and monitors, ventilation ducting, communication cables and survey stations; locking out and/or tagging; and repairing and/or reporting deficiencies according to government legislation, company standards and manufacturer specifications.

Date Completed

Trainer's Signature

Trainee's Signature

- 0086.05 Conduct pre-operational checks on mobile and non-mobile shotcrete equipment and carrier, by testing power source; checking fluid levels; following refuelling procedures; checking principle components, including: steps, guards and hand rails, cab/canopy, chassis, engine/power source, power train, controls, shotcrete boom, jacks, wheel chocks, trailing cable, lighting and warning systems, tires, wheel and wheel nut assemblies; visually inspecting fire extinguishers and fire suppression systems; checking pins and nozzles; using 3 point contact while mounting and dismounting; locking out and/or tagging; and repairing and/or reporting deficiencies according to government legislation, company standards and manufacturer specifications.

Date Completed

Trainer's Signature

Trainee's Signature

PERFORM SHOTCRETING

U0086.0 PERFORM SHOTCRETING - Cont'd

- 0086.06 Start up shotcrete carrier, by activating power source; using warning systems and signals; observing equipment operation, load and gauges; testing brakes; checking for clearances and activity in area; locking out and/or tagging; and repairing and/or reporting deficiencies according to government legislation, company standards and manufacturer specifications.

Date Completed

Trainer's Signature

Trainee's Signature

- 0086.07 Position shotcrete carrier, within the designated work area, by setting park brake; lowering stabiliser jacks; positioning wheel chocks; locking out and/or tagging; and repairing and/or reporting deficiencies according to government legislation, company standards and manufacturer specifications

Date Completed

Trainer's Signature

Trainee's Signature

- 0086.08 Perform pre-operational checks on shotcrete equipment, by inspecting principle components, including: pumps, mixers, batchers, hoses and nozzles, booms and cylinders, lubricator, lifting mechanism, water sprays and curtains; applying equipment barrier oil; using personnel protective equipment; ensuring required ventilation; noting direction of ventilation flow and position of ventilation/fire doors; locking out and/or tagging; and repairing and/or reporting deficiencies according to government legislation, company standards and manufacturer specifications.

Date Completed

Trainer's Signature

Trainee's Signature

- 0086.09 Place shotcrete, by applying it to predetermined area and pre-determined thickness; using personal protective equipment, including: masks or full face breathing helmets and coveralls; locking out and/or tagging; and repairing and/or reporting deficiencies according to government legislation, company standards and manufacturer specifications.

Date Completed

Trainer's Signature

Trainee's Signature

PERFORM SHOTCRETING

U0086.0 PERFORM SHOTCRETING - Cont'd

0086.10 Shut down equipment, by blowing out/flushing equipment; washing down equipment; performing housekeeping; disconnecting equipment; storing in designated/approved area; locking out and/or tagging; completing operator report; and repairing and/or reporting deficiencies according to government legislation, company standards and manufacturer specifications.

Date Completed

Trainer's Signature

Trainee's Signature

Employer's Name

Employer's Signature



